Before the

UNITED STATES DEPARTMENT OF COMERCE

National Telecommunications and Information Administration

Washington, D.C. 20230

_____

In the Matter of Issues Relating	)	RIN: 0660-ZS28
To the Implementation of the	)	Docket No. 0907141137-91375-05
Broadband Technology	)	
Opportunities Program	)	

_____

COMMENTS OF THE BILL AND MELINDA GATES FOUNDATION

Table of Contents

* * * * * * * *

Executive Summary. The Bill & Melinda Gates Foundation ("the foundation") appreciates the opportunity to offer recommendations to the National Telecommunications and Information Administration (NTIA) for awarding the balance of available Broadband Technology Opportunities Program (BTOP) funds as authorized by the American Reinvestment and Recovery Act (ARRA) to accelerate the deployment, adoption, and use of high-capacity broadband for all Americans. We acknowledge NTIA's tremendous efforts to date, to efficiently and equitably disburse ARRA funds under a highly compressed timeframe. NTIA is to be commended for its willingness to incorporate lessons learned from the first round into its subsequent and final Notice of Funds Availability (NOFA) in order to maximum the benefits of remaining BTOP funds.

Since 1997, the foundation has worked with the nation's public library system to make sure all people have access to the benefits and opportunity that technology affords. We wholeheartedly endorse the administration's long-term vision of universal, on-demand, broadband access to the home. In our judgment, the most cost-effective first step toward this broader vision would be to support the efforts of our nation's anchor community institutions –

public libraries, K-12 schools, and community colleges – to provide high-quality broadband to the patrons and students they serve. Without the public access technology offered by anchor community institutions, millions of young people and adults would lack on-line access to the educational, economic and social opportunities integral to a quality and productive life. It is from this point of view that we respectfully submit the following recommendations for the final NOFA. We recommend NTIA:

- Prioritize and maximize the use of remaining BTOP funds to accelerate the deployment of broadband to anchor community institutions;
- Establish a separate category for applicants proposing to deploy broadband to community institutions;
- Strongly encourage but do not require inter-connection with last mile service providers as a condition of applicants proposing to deploy broadband to anchor community institutions;
- Prioritize projects that create the greatest broadband access for <u>vulnerable</u> populations who are the least likely to have broadband access at home;
- Use BTOP Infrastructure funding to invest in the fastest Internet connections possible to increase broadband <u>availability</u>, and use BTOP Public Computer Center (PCC) funding to increase broadband <u>capacity</u> to the greatest number of anchor community institutions possible;
- Consider the *breadth* of impact (e.g., numbers of community institutions and vulnerable individuals reached) when evaluating BTOP Infrastructure proposals; and the *depth* of impact (e.g., the expansion of services to deepen educational and employment services available to vulnerable populations) to evaluate BTOP PCC proposals;
- Relax the conditions for waiving the matching requirement to encourage greater numbers of public sector applicants;
- Shift more BTOP funding to the PCC category given current needs for greater broadband capacity and Round 1 demand for this funding;
- Complement the E-rate program by making available BTOP funding to support the construction of infrastructure and one-time equipment and installation costs necessary to upgrading connectivity; and
- Provide greater clarity on the interplay between E-rate and BTOP funding to avoid jeopardizing a BTOP applicant's E-rate eligibility.

* * * * * * * *

I.   **Funding Priorities & Objectives for NTIA's Final NOFA**

We encourage NTIA to prioritize and maximize the use of remaining BTOP funds to accelerate the deployment of broadband to anchor community institutions. NTIA has requested comments and recommendations on how it can better target remaining BTOP funds to achieve the goals of the ARRA. We endorse NTIA's proposed concept to fund "Comprehensive Community" projects. The targeted use of these funds for this purpose would represent 1) the most cost-efficient use of remaining funds – and would create the greatest access to high-speed broadband to the greatest number of Americans; 2) an opportunity to further advance the educational priorities of the current administration; and 3) potentially catalyze and facilitate the growth of additional broadband infrastructure in communities across the country.

- *Cost Efficient Investment.* The funds made available by the ARRA to accelerate broadband deployment will provide an initial down-payment on the broader goal of creating universal household access. In our judgment, the most cost-efficient first step toward this broader goal is to create high-quality universal access to broadband through the nation's public library system and other anchor community institutions. The foundation recently estimated that it would cost roughly $0.7 – 1.7 billion to deploy fiber to all public libraries; $5 – 10 billion to connect 125,000 anchor community institutions: major hospitals, community colleges, K-12 schools, and public libraries.[1] If BTOP funds are used to deploy high-capacity broadband access to even one-half of public libraries, broadband access would be available to 133 million Americans who have proximate access to a public library, 17.1 million of whom live under the federal poverty line and are therefore less likely to have broadband access at home.[2]

- *Promoting Educational & Economic Outcomes.* By improving both the delivery and the use of educational curricula, adequate broadband capacity can advance the administration's laudable efforts to improve student achievement at the elementary, secondary and post-secondary levels. For the non-student population, public libraries can serve as centers of self-directed learning and as de facto employment and training centers. A recent University of Washington survey of more than 45,000 library computer users found that 36 percent of library patrons use public access technology at the library to undertake job searches and 35 percent use public library computers to

---

[1] *Preliminary Cost Estimates on Connecting Anchor Institutions to Fiber* - Bill & Melinda Gates Foundation; as submitted to the Federal Communications Commission, October 5, 2009. (Note: Estimates were for last mile fiber connections and do not include middle mile or backhaul capacity costs).
[2] *Estimates on Broadband Access Created* - Community Attributes, September 2009

access on-line adult education courses.[3]

- ***Facilitating Further Build-Out.*** An initial broadband investment in anchor community institutions has the potential to spur additional build-out to the surrounding community. Many state owned networks whose original objective was to connect K-12 schools have expanded to connect other public sector entities including schools and libraries. The expansion of these networks to further inter-connect with last mile providers serving households, while nascent in concept, holds promise for expanding broadband access in under-built communities.

II.   Funding Criteria for NTIA's Final NOFA

In administering a second NOFA focused and targeted on anchor community institutions, NTIA has requested comments on the criteria used to evaluate such applications. The foundation's thoughts on NTIA's specific questions follow.

Should NTIA focus on or limit Round 2 funding on projects that will deliver middle mile infrastructure facilities into a group of communities and connect key anchor institutions within those communities?

> **We recommend targeting BTOP funding by establishing a separate category for applicants proposing to deploy broadband to anchor community institutions.** Depending on the community and degree of infrastructure present, anchor community institutions may require last mile, middle mile, or backhaul infrastructure. As such, anchor community institutions found themselves at a significant disadvantage when applying for Round 1 BTOP funding. Again, some community institutions only require last mile connections while others are in need of middle mile infrastructure. Anchor community institutions were ineligible to apply for NTIA's 'last mile' category given the limited focus on connecting households. For anchor community institutions that sought 'middle mile' funding, many community institutions struggled to meet NTIA's requirement to estimate the number of additional households to be connected given a lack of access to private providers that hold this information. Rather than establish criteria for 'last mile' and 'middle mile' projects we recommend NTIA establish funding categories organized around its program priorities. In other words, if increasing the availability of high-capacity broadband to anchor community institutions is an express priority of the next NOFA, we recommend NTIA establish criteria specific to applicants (whether they are the public sector or private providers) who seek to advance this objective. Applicants requesting funding under this category could then

---

[3] *U.S. IMPACT Web Survey – Preliminary Results,* University of Washington Information School, September 2009

articulate their infrastructure needs whether they be last mile, middle mile, or backhaul requirements.

In the event that NTIA also establishes a parallel 'household' category, we suggest NTIA consider awarding additional points for applicants who request funds in this category and voluntarily offer to connect anchor community institutions in addition to the households they propose to serve. This would be an additional means of creating incentives to deploy broadband to anchor community institutions.

Should we give priority to those middle mile projects in which there are commitments from last mile service providers to use the middle mile network to serve end user in the community?

We recommend NTIA encourage but not require inter-connection with last mile service providers for applicants proposing to connect anchor community institutions. In the first round NOFA, NTIA placed a priority on applicants who proposed to connect anchor community institutions and also inter-connect with 'last mile' providers and deploy broadband to households. We fully support the idea of building public-private partnerships as a way to facilitate the build out of additional infrastructure and concur that anchor community institution networks should be open to inter-connection by 'last mile' providers. However, this requirement proved challenging for many Round 1 applicants for two reasons: 1) the short timeframe to submit Round 1 proposals made it difficult to establish such partnerships with last mile providers; and 2) in smaller communities, last mile providers are few in numbers. NTIA should certainly encourage infrastructure projects of this nature, but we also encourage NTIA to recognize the inherent value and benefits of connecting community institutions regardless of whether last mile connections to households are achieved. While we are optimistic that these types of projects can be built and will proliferate over time, we respectfully request NTIA remove this requirement as a pre-condition to receiving BTOP funding in the next NOFA.

Should NTIA's goal be to fund middle mile projects that provide new coverage of the greatest population and geography so that we can be assured that the benefits of broadband are reaching the greatest number of people?

Given the limited resources available under this program, we recommend NTIA prioritize projects that create the greatest broadband access for the greatest number of <u>vulnerable</u> individuals (e.g., economically disadvantaged, the unemployed, immigrants, etc.). In the absence of more granular information on who has access to broadband and who does not and where these individuals reside, vulnerable populations arguably represent the best

proxy for those individuals currently lacking broadband access at home.[4]

In addition, we recommend NTIA remove the current requirement that applicants proposing to serve anchor community institutions be located in areas that serve at least one 'unserved' or 'underserved' census block. NTIA's current definitions of 'unserved' and "underserved" require applicants to meet an extremely high threshold of need. Consequently, a majority of anchor community institutions (many in urban areas) were rendered ineligible for Round 1 funding, despite the fact that these institutions serve large number of individuals without broadband access at home.[5] Furthermore, the ARRA statutory language did not make serving "unserved" and "underserved" residences a requirement of using BTOP funding to support anchor community institutions.[6] As recommended above, NTIA should instead require these applicants to demonstrate that they are serving significant numbers of vulnerable individuals which is consistent with the stated BTOP objective "*to provide broadband access education, awareness, training, equipment and support to community anchor institutions or organizations serving vulnerable populations*".

Should certain institutions, such as educational services, be given greater weight to reflect their impact on economic development or a greater need or use for broadband services?

In line with our recommendation above, we support targeting BTOP resources to community anchor institutions. Specifically, we strongly encourage NTIA to use BTOP Infrastructure funding to make ultra high-speed connections (100 Mbps or greater) where ever possible <u>or</u> alternatively, the fastest Internet connection possible to increase broadband <u>availability</u>, and to use BTOP Public Computer Center (PCC) funding to increase broadband <u>capacity</u> for the greatest number of anchor community institutions possible.

We understand that there are three major barriers to acquiring and/or improving high-capacity broadband access among public libraries: one-third cite a <u>lack of access</u> to broadband infrastructure; another third point to the <u>inability to pay for additional bandwidth</u> even if it is available because of one-time installation and recurring subscription costs that are cost prohibitive; and the final third point to a <u>lack of awareness and/or</u>

---

[4] Adults lacking broadband access are more likely to be less-educated, lower-income, people of color, and immigrants; Pew Internet & American Life Project, 2008.

[5] *Unserved Area* is currently defined as an area where "at least 90 percent of households in the proposed funded service area lack access to facilities-based terrestrial broadband service, either fixed or mobile, at the minimum broadband speed" (768kpbs); *Underserved Area (for Middle Mile Projects)* is currently defined as an area "composed of one or more contiguous census blocks where one interconnection point terminates in a census block are that qualifies as unserved or underserved for Last Mile Projects".

[6] Please see *Section 6001(b) (3)* of the American Reinvestment & Recovery Act.

priority to upgrade insufficient connectivity.[7] We surmise that these same barriers exist for other anchor community institutions as well. Using the balance of its BTOP funding, NTIA has the opportunity to address two of these three barriers: a lack of available broadband infrastructure and the inability to pay for additional bandwidth using its Infrastructure and PCC funding, respectively.

Infrastructure Investments. The current NOFA adopts a current broadband definition of 768 kbps (download speed) that is wholly inadequate to meet the needs of anchor community institutions. In order to maximize its one-time only infrastructure investments in communities where broadband currently is not available, we recommend NTIA invest in projects that create capacity in far excess of 768kpbs. As an aspirational goal, NTIA should encourage Infrastructure applicants to build out ultra high-speed connections (100 mbps or greater) where ever possible. This capacity will enable anchor community institutions to upgrade their connectivity over time with relative ease and reasonable cost in response to advances in technology and increases in user demand. However, we acknowledge that some communities may not be able to initially sustain the ongoing cost of ultra high-speed broadband. Where this is the case, NTIA should encourage applicants to build-out the maximum bandwidth capacity possible so that NTIA's infrastructure investments do not merely result in short-lived incremental improvements.

Public Computer Center Investments. Using PCC funding, NTIA has the opportunity to remove the *cost barrier* to improve broadband access among anchor community institutions. To ensure that these investments are cost-effective, we suggest NTIA place the onus on anchor community institution applicants requesting PCC funding to convincingly articulate how greater bandwidth will enable applicants to deliver improved or expanded educational and/or economic development services and/or outcomes. This puts the emphasis on demonstrating the case for using additional bandwidth to support *purposeful use*. It also enables NTIA to evaluate the merits of PCC proposals on how the applicant intends to use additional bandwidth for the benefit of vulnerable populations.

To the extent that NTIA does focus the remaining funds on comprehensive community projects, what attributes should NTIA be looking for in such projects (e.g., number of community institutions, numbers of vulnerable populations; appropriate levels of matching funds)?

We encourage NTIA to prioritize proposed projects that reflect both *breadth* and *depth*. The *breadth* of a project – the scale and number of anchor community institutions as well as

---

[7] *Libraries Connect Communities: Public Library Funding & Technology Access Study* – American Library Association, 2007.

the numbers of vulnerable populations with new access to broadband - should be of significance as NTIA evaluates Infrastructure proposals. For PCC investments, greater priority should be placed on assessing the *depth* of proposed projects - institutions should convincingly demonstrate their ability to provide programs and services that allow vulnerable populations greater access to educational and economic opportunities.

We also suggest NTIA relax the requirements under which it waives the 20 percent match requirement. For many public library applicants (and we would assume other publicly funded institutions) experiencing significant local and state budget reductions, the matching requirement proved to be a significant barrier to applying for Round 1 BTOP funds. NTIA may want to consider relaxing the conditions under which it would waive this requirement so that greater numbers of public sector applicants would have the opportunity to compete for BTOP funds.

III.   Public Computer Centers & E-Rate

NTIA also seeks comments and suggestions on targeted populations, the use of Public Computer Center funding to support these populations, and the interplay with E-Rate. The foundation's responses to select questions referenced in the RFI are noted below.

How can funds for Public Computer Centers (PCC) be targeted to increase broadband access and use among vulnerable populations?

PCC funding can expand access to broadband for vulnerable individuals through the nation's anchor community institutions. As previously mentioned, the distinction between NTIA's Infrastructure category and the PCC category is whether additional broadband capacity is in fact, available to the applicant. For applicants seeking funding under the Infrastructure category it is assumed that additional bandwidth is not available due to a lack of available infrastructure. For those applying under the PCC category we assume that additional bandwidth capacity is available but cost prohibitive to the applicant (e.g., funding is not available for one-time only installation costs or the recurring subscription fees are cost prohibitive, even with E-rate)[8].

Again, we believe anchor community institutions are best positioned to forward NTIA's goals of broadband deployment, adoption and purposeful use because of their open access

---

[8] The foundation recently made grants to support improved connectivity in public libraries in 7 states. In reviewing these grant proposals, we noted that some high bandwidth options (e.g., fiber and T-3) are cost prohibitive both in terms of monthly subscription costs which often exceeded $1,000 per month (before E-rate discounts applied) and one-time deployment costs which ranged from $1,000 - $2,600.

to the public, and ability to support vulnerable individuals in the adoption and use of technology toward education and economic ends. In addition, these institutions are present in almost every community where vulnerable populations have proximate access to them. As noted earlier, we would strongly encourage NTIA to require PCC applicants to articulate how they will both reach out to and serve the vulnerable populations that are most likely to depend on an anchor community institution for access to broadband services.

Should NTIA shift more BTOP funds into public computer centers than is required by the Recovery Act?

We strongly urge NTIA to make significantly more funds available under the PCC funding category. As previously noted, one-third of public libraries cite the inability to pay for additional bandwidth even if it is available. Many public libraries and we assume other anchor community institutions as well, cannot afford the one-time installation costs, and/or the monthly subscription costs associated with upgrading their connectivity. As noted earlier, there are an equal number of public libraries in need of assistance to defray the cost of paying for additional bandwidth, as there are those in need of infrastructure build-out in order to improve their connectivity. This demand was substantiated by the overwhelming number of BTOP applications seeking PCC funding in response to NTIA's first NOFA. Of the $50 million NTIA allocated to support PCC awards, NTIA received $1.9 billion in application requests, or nearly ten times the $200 million the ARRA mandated be minimally allocated for this purpose. We would strongly encourage NTIA to shift more of these funds to support PCC applications to accommodate those public libraries and schools located in places where additional bandwidth is accessible but cost prohibitive even with E-rate discounts. (Please see additional comments below on E-Rate).

Should libraries be targeted as sites for public computer access, if so how would BTOP funding interact with E-rate funding?

BTOP funding can complement the E-rate program. The importance of E-rate in connecting schools and public libraries over the last decade cannot be over stated. From the foundation's perspective the availability of E-rate to make Internet access affordable to public libraries has been integral to creating public access to technology in the nation's public library system.

- *Current Limitations of E-Rate.* Nonetheless, there are limitations to the E-rate program which do not make it a panacea for deploying or improving broadband access for schools and libraries. With growing annual demand for *Priority 1* E-rate services (telecommunications services & Internet access*)* and a fixed cap on the E-rate fund of $2.25B annually (which has not seen increases since the fund's initial

creation in 1996), E-rate funds available for *Priority 2 services* (internal connections necessary to transport information to individual classrooms or library rooms – e.g., cabling, switches and routers) have diminished over time. As noted in a recent GAO report, *"requests for E-rate funding consistently exceed the cap, and increased commitments for Priority 1 Services, combined with significant undisbursed funds, limit funding for Priority 2 services".[9]* As a result, a growing number of schools and public libraries cannot afford connectivity upgrades because of the inability to pay for one-time only installation and transport costs. Given the limitations of E-rate to support these necessary one-time costs, BTOP PCC funding can assist in closing this funding gap.

Furthermore, for those schools and public libraries without access to broadband infrastructure, the E-rate program prohibits the use of its funds to support the construction or purchasing of wide-area networks. In many communities, E-rate has enabled schools and libraries to pay for broadband services and in turn create sufficient demand to justify a private investment in broadband infrastructure. However, in less densely populated areas of the country or more rural communities, demand from a school or library that requests E-rate discounted Internet access may not create a sufficient incentive for private providers to build-out needed infrastructure. In these instances, additional support and incentives are needed and where specifically, BTOP Infrastructure funds can complement the E-Rate program.

- ***Further Clarity is needed on the Interplay between BTOP & E-Rate.*** Many public libraries responding to NTIA's first round NOFA sought clarity around how the two programs could appropriately support one another to avoid jeopardizing their E-rate eligibility. We request that NTIA consult its counterparts at the FCC and Universal Service administrative Company (USAC) to provide additional clarity on the interplay between the two programs. The following represents some of the most frequently asked questions surfaced by Round 1 public library applicants:

  o If a public library does in fact, partner or contract with a last mile provider to interconnect with it to fulfill current requirements under the BTOP, does that violate the "fair and open" bidding process as required by the E-rate program?

---

[9] *Long-Term Strategic Vision Would Help Ensure Targeting of E-rate Funds to Highest-Priority Uses, p.13* – U.S. Government Accountability Office, March 2009

- Can school and library networks that inter-connect with last mile providers remain eligible for E-rate funding given current E-rate restrictions on the use or transfer of network capacity?

- Given the time lag for securing E-rate funds for connectivity upgrades, can BTOP PCC funds be used to pay 100% of monthly subscriptions cost until E-rate discounts are secured for upgraded service? If and when an E-rate discount is secured, can a BTOP recipient use PCC funds to cover the non-discounted portion of E-rate? (As noted earlier, for many libraries who successfully secure E-rate discounts, the non-discounted portion of their monthly subscription rates remains cost-prohibitive.)

- Given that many public libraries will need to secure E-rate discounts prior to upgrading service, can connectivity upgrades under BTOP be completed at any time within the three-year life of the grant?

- Is a sustainability strategy that is dependent on E-rate funding acceptable to NTIA under BTOP?

- The Recovery Act states that the "federal share" of any project cannot exceed 80% of the proposed project cost. Can E-rate funds be used to fulfill a portion of the BTOP required 20% match given that the source of E-rate funds are not technically federal funds?

- How is the allocation of E-rate eligible costs affected when a multi-fiber pipe to a library is shared by users in the surrounding community?

* * * * * * *

Thank you again for the opportunity to offer our recommendation for NTIA's next NOFA. NTIA is to be commended for its openness to hearing from the community that shares in its objectives and vision of creating greater broadband access for all Americans. We would be pleased to respond to any questions NTIA may have in response to these comments.

Respectfully Submitted,

Allan Golston
President, U.S. Program
Bill & Melinda Gates Foundation